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(11) EP 1 366 994 A1

(12)

EUROPEAN PATENT APPLICATION
published in accordance with Art. 158(3) EPC

(43) Date of publication:

03.12.2003 Bulletin 2003/49

(51) Int Cl.⁷: B65C 7/00, G09F 3/00,
G09F 3/16

(21) Application number: 02702721.8

(86) International application number:
PCT/JP02/01935

(22) Date of filing: 01.03.2002

(87) International publication number:
WO 02/070351 (12.09.2002 Gazette 2002/37)

(84) Designated Contracting States:

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE TR

Designated Extension States:

AL LT LV MK RO SI

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(30) Priority: 01.03.2001 JP 2001057204

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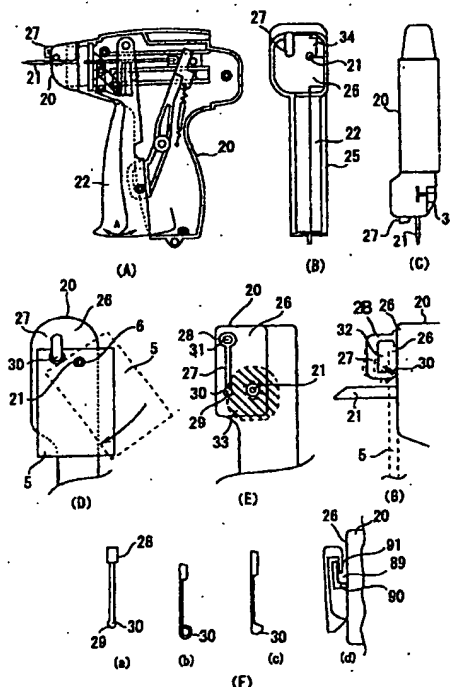
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(54) LOCKING ELEMENT ATTACHING DEVICE

(57) The present invention is to provide a tag attaching device which can enable one of the operator's hands other than his hand which is used for operating the tag attaching device to be used, to be free for separate necessary operation, when a predetermined tag should be attached to a predetermined good utilizing the tag attaching device 20 and thus it is disclosed that a tag attaching device 20 for attaching a tag attaching pin 1 comprising a filament section 4, an inserting head section 2 provided at one end of the filament section 4, and a socket section 15 or holding section 3 provided at the another end of the filament section 4, onto a predetermined good 100 with a tag 5 engaged on the filament section 4, by inserting the inserting head section 2 of the pin 1 into a hollow needle 21 provided on the tag attaching device 20 and penetrated through the good 100 and by pushing the inserting head 2 out of the hollow needle 21 utilizing a predetermined pin pushing means so as to have the inserting section 2 attached to a surface of the good 100 with the tag 5, wherein the device 20 being provided with a tag holding means 27 for tentatively holding the tag 5, 400 on the device 20, on a front end portion of the device 20 from a surface of which the hollow needle 21 being projected and at a position in the vicinity of the position from which the hollow needle 21 being projected.

Fig. 1



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Description

Field of the Invention

[0001] The present invention relates to a tag attaching device which can shoot a pin which can bind clothes, socks, or the like or which can attach tags such as brand labels, price tags, material description, instructions or the like to a good by inserting one end portion of the pin into the good.

Background of the Invention

[0002] In general, in order to bind clothes, daily small articles, sandals, shoes or the like or to efficiently attach brand labels, price tags or the like to relevant products, various kinds of tag attaching device have been used in the past.

[0003] One embodiment of a specific configuration of a conventional tag attaching pin is shown in Fig. 2.

[0004] As shown in Fig. 2, the tag attaching pin 1 comprises a desired filament section 4, an insertion head section 2 provided at one end portion of the filament section 4 and a holding section 3 provided at the another end of the filament section 4 and which can hold a tag 5 thereon, and the tag attaching pin 1 is made of a suitable synthetic resin material and all of the above-mentioned sections are integrally molded into one body.

[0005] As shown in Fig. 3, first, the filament section 4 of the tag attaching pin 1 is inserted into a hole 6 which had been previously provided on the tag 5 and then the insertion head section 2 of the tag attaching pin 1 with the tag 5 held thereon, is penetrated through a desired portion of a desired good 100 so that the tag attaching pin 1 is engaged with the good 100.

[0006] On the other hand, a separate embodiment of the tag attaching pin 10 used in the past will be explained hereunder with reference to Fig. 4.

[0007] A tag attaching pin 10 as shown in Fig. 4, comprises a flexible filament section 12, an insertion head section 13 equipped with a suitable engagement section 16 located at one end of the filament section 12, and a socket section 15 equipped with a hole 14 for irreversibly passing the insertion head section 13 located at the other end of the filament section 12, wherein the hole 14 being provided with a pair of blade section 17, 17' inside thereof and which can engage with the engagement section 16 of the insertion head section 13.

[0008] And further, as similar to the above mentioned previous embodiment, this conventional tag attaching pin 10, for example, is made of a synthetic resin material such as ordinal nylon resin, polyester resin or the like and also the insertion head section 13, the socket section 15 and the filament section 12 thereof being integrally molded into one body.

[0009] In the above-mentioned embodiment, as shown in Fig. 5, when a desired good, for example a bag 200, is a target good to which a tag should be attached,

after the filament section 12 is inserted into a hole 410 previously provided on the tag 400, such as a label or the like, the socket section 15 and a part of the filament section 12, for example, are passed through a space formed between a gripping portion 300 of the bag and a surface of main body of the bag 200 and then the insertion head section 15 is inserted into the hole 14 formed inside the socket section 15 which having a function to hole the tag, so that a predetermined tag 400 can be attached to the good 200 with reducing the filament section 12 into a loop like configuration.

[0010] On the other hand, for example, as shown in Fig. 6, a tag attaching device 20 which is generally called as a pin shooting gun, has been already known whereby the above-mentioned tag attaching pin 1 or 10 can be attached to a good 100 and wherein the tag attaching device 20 comprises a hollow needle 21 to be penetrated through a desired good so as to engage the insertion head section 2 of the tag attaching pin 1 with a back side surface of the good and by operating a suitable lever 22, the insertion head section 2 is inserted into the hollow needle 21 and then the insertion head section 2 is pushed out from the hollow needle 21 utilizing a suitable pin pushing-out means so as to have the insertion head section 2 of the tag attaching pin engaged with the good.

[0011] In this embodiment, it is preferable that the unit of tag attaching pin 1 can be shot out from the tag attaching device 20 one by one or it is also preferable that as shown in Fig. 7, a plurality of the unit tag attaching pin 1 are arranged in parallelism with each other and they are simultaneously connected to a suitable connecting member such as a runner bar 24 via a respective suitable connecting member 11, and as shown in Fig. 7, the integratedly assembled tag attaching pins are inserted into an insertion portion 41 provided on a top end surface of the tag attaching device 20 as shown in Fig. 6, so as to enable each one of the tag attaching pins 1 to be successively shot individually into a predetermined good, respectively so that in that a tag can be attached to the good.

[0012] However, in the conventional tag attaching device, an operator should hold a tag 5 with his separate hand from the one which is gripping the tag attaching device 20 and further he should once engage the tag 5 with the hollow needle via a hole 6 previously provided on the tag 5 and further with keeping the tag 5 on the hollow needle, he should shot the tag attaching pin 1 into a good by penetrating the hollow needle 21 into a predetermined good.

[0013] Under this circumstance, both hands of the operator are simultaneously used for operating the tag attaching device 20 and for keeping the tag on the hollow needle and thus this fact is very inconvenient for every operator who use this device if when necessary goods should be held by his hands or should be moved to some where.

[0014] Note that when a tag 5 has already been engaged with the hollow needle 21, and when a good

should be moved or should be changed its facing direction, if the operator left his hand holding the tag 5, from the tag 5, there must be arisen a problem in that the tag 5 is necessarily fallen down.

[0015] When such tag attaching pin 1 is about to be attached on a good, and especially when an operator should perform such operation facing down-wardly, the tag 5 is necessarily fallen down but at this time, both of hands of the operator are busy and cannot be used for such tag supporting operation and thus this fact causes the above-mentioned problem to be serious.

[0016] In order to resolve these problems in the past, another idea had been used in which a length of the hollow needle 21 defined by projected portion thereof from a surface of the main body of the tag attaching device is made longer than that of the conventional device, but this idea raised also another problem in that the operator's hands were frequently suffered from damages from the hollow needle as well as the length of the tag attaching device 20, per se, had been necessarily elongated.

[0017] Therefore, an object of the present invention is to resolve the above-mentioned problems in the past and to provide a tag attaching device which is configured so as to enable one of the operator's hands other than his hand which should be used for operating the tag attaching device to be used free for separate necessary operation when a predetermined tag should be attached to a predetermined good utilizing the tag attaching device.

Summary of the Invention

[0018] In order to achieve the above-noted object of the present invention, the present invention adopts the following basic technical constitution.

[0019] Specifically, a first aspect of the present invention is a tag attaching device for attaching a fastening pin comprising a filament section, an inserting head section provided at one end of the filament section, and a socket section or holding section provided at the another end of the filament section, onto a predetermined good with a tag engaged on the filament section, by inserting the inserting head section of the pin into a hollow needle provided on the tag attaching device and penetrated through the good and by pushing the inserting head out of the hollow needle utilizing a predetermined pin pushing means so as to have the inserting section attached to a surface of the good with the tag or by inserting the inserting head section thereof into a hollow needle provided on the tag attaching device and by pushing the inserting head out of the hollow needle utilizing a predetermined pin pushing means so as to have the inserting section engaged with the socket section of the pin with the tag through a part of the good, wherein the device being provided with a tag holding means for tentatively holding the tag on the device, on a front end portion of the device from a surface of which the hollow needle being projected and at a position in the vicinity of the

position from which the hollow needle being projected.

[0020] And a second aspect of the present invention is a tag attaching device, wherein the tag attaching device being configured so that by using a tag having a hole which is previously provided on the tag to be engaged with the filament section of the pin, the hole being designed so as to have an diameter being slightly larger than that of the hollow needle, the tag is first engaged with the hollow needle via the hole and thereafter the tag being rotated with respect to the hollow needle as a rotation center of the tag so that a part of the tag being inserted into a portion formed between the enlarged portion of the label holding means and the surface of the main body portion of the tag attaching device whereby the tag being fixedly secured on the front end portion of the tag attaching device.

BRIEF DESCRIPTION OF THE DRAWINGS

[0021]

Fig. 1 is a drawing illustrating a configuration of a specific embodiment of a tag attaching device of the present invention;

Fig. 2 is a drawing showing a configuration of a specific embodiment of a tag attaching pin used in the present invention;

Fig. 3 is drawing illustrating a schematic view of one embodiment of the tag attaching pin used for a good;

Fig. 4 is a drawing illustrating a configuration of another specific embodiment of a tag attaching pin of the present invention;

Fig. 5 is schematic view showing a schematic view of another embodiment of the tag attaching pin as shown in Fig. 4, used for a good;

Fig. 6 is drawing illustrating a condition for usage of one embodiment of a tag attaching device of the present invention;

Fig. 7 is drawing illustrating one operational embodiment of the tag attaching device of the present invention showing how to mount the tag attaching pins on the tag attaching device of the present invention;

Fig. 8 is a drawing showing some example of configurations of the tags used in the present invention;

Fig. 9 is drawing illustrating a configuration of another embodiment of the tag attaching pins each connected to a pair of connecting bars in the present invention;

Fig. 10 is a drawing showing a configuration of another embodiment of the tag attaching device in the present invention;

Fig. 11 is a top plan view of the tag attaching device as shown in Fig. 10;

Fig. 12 is a drawing showing how to use the tag attaching device as shown in Fig. 10;

Fig. 13 is a drawing showing one embodiment of

the tag attaching device as shown in Fig. 10 to which a tag holding means of the present invention is applied;

Fig. 14 is a drawing showing a condition in that a tag is engaged with the tag attaching device of the present invention;

Fig. 15 is a drawing illustrating a configuration of another specific embodiment of a tag attaching device of the present invention;

Fig. 16 is a drawing showing one embodiment of the tag attaching device as shown in Fig. 15 to which a tag holding means of the present invention is applied;

Fig. 17 is a drawing showing a condition in that a tag is engaged with the tag attaching device of the present invention;

Fig. 18 is a drawing showing sequential process steps under which a tag is engaged with the tag attaching device of the present invention;

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0022] Since the tag attaching device of the present invention adopts the above-mentioned technical features, in performing an operation for attaching a predetermined tag to a predetermined good using a predetermined tag attaching pin with utilizing a tag attaching device of the present invention, it becomes possible to realize a situation in that an operator can use at least one of his hands freely and thus the operation of the tag attaching device becomes easy for the operator and in addition to this, the projecting length of the hollow needle projected from a surface of the tag attaching device, can be shortened enabling safety characteristic of the tag attaching device to be improved.

Example

[0023] A configuration of a preferred embodiment of the tag attaching devices of the present invention will be described hereunder with reference to the attached drawings.

[0024] Figs. 1 shows a configuration of one specific embodiment of the tag attaching device of the present invention and in Fig. 1, it is shown an tag attaching device 20 for attaching a tag attaching pin 1 comprising a filament section 4, an inserting head section 2 provided at one end of the filament section 4, and a socket section 15 or holding section 3 provided at the another end of the filament section 4, onto a predetermined good 100 with a tag 5 engaged on the filament section 4, by inserting the inserting head section 2 of the pin 1 into a hollow needle 21 provided on the tag attaching device 20 and penetrated through the good 100 and by pushing the inserting head 2 out of the hollow needle 21 utilizing a predetermined pin pushing means so as to have the inserting section 2 attached to a surface of the good 100

with the tag 5 or by inserting the inserting head section 13 thereof into a hollow needle 21 provided on the tag attaching device 20 and by pushing the inserting head 13 out of the hollow needle 21 utilizing a predetermined pin pushing means so as to have the inserting section 13 engaged with the socket section 15 of the pin 10 with the tag 400 through a part of the good 200, wherein the device 20 being provided with a tag holding means 27 for tentatively holding the tag 5, 400 on the device 20, on a front end portion of the device 20 from a surface of which the hollow needle 21 being projected and at a position in the vicinity of the position from which the hollow needle 21 being projected.

[0025] Note that although in the past, when a tag 5, 400 such as a label or the like, is to be attached to a good utilizing a tag attaching device 20, and when the tag 5, 400 is first set on the tag attaching device 20 and then it is attached to the good, it is necessary for the tag to be held on the device by an operator's hand so that the tag does not fall down, in the present invention, the operator can easily attach the tag to a good only by his single hand, with utilizing the tag holding means serving as a means for preventing the tag from falling down from the device.

[0026] Specifically, in the present invention, the tag holding means 27 serving for preventing the tag 5, 400 from falling down from the device, is provided in the vicinity of the hollow needle 21 provided on a surface of the front end portion of the tag attaching device 20 and having a function of temporally engaging the tag 5, 400 on the needle 21 via a hole 6, 410 previously provided on the tag 5, 400, as shown in Fig. 8, for example, it is provided in an area within a range between 5 to 20 mm from the needle 21.

[0027] By taking this configuration in the present invention, as shown in Fig. 1 (D), when the tag 5, 400 should be set on the tag attaching device, first the tag 5, 400 is engaged with the hollow needle 21 via the hole 6, 410 provided on the tag 5, 400, and then the tag 5, 400 is rotated or swung with respect to the hollow needle 21 as a rotational center thereof, so that a corner portion of the tag 5, 400 is inserted into the tag holding means 27 enabling the tag 5, 400 to be securely held on the front end portion 26 of the tag attaching device 20.

[0028] The tag holding means 26 can be made of any kind of material but it is preferable that it is made of metallic material or synthetic resin material.

[0029] As the metallic material, for example, spring steel SUS is one of a preferable material for it.

[0030] Further, as the synthetic resin material, for example, nylon, polycarbonate or polyacetal is one of a preferable material for it.

[0031] The tag holding means 26 used in the present invention, has a configuration in that one end portion 28 of the tag holding means 27 is solidly fixed at a desirable position in the vicinity of the position at which the hollow needle 21 being provided on a surface on a front end portion 26 of a main body portion of the device 20, uti-

lizing a desirable fixing means 31, while another end portion 29 thereof being provided with an enlarged tip portion 30 expanding at least in a direction facing to the surface of the front end portion 26 of the main body portion of the device 20 and the enlarged portion 30 further being detachably impinged on the surface of the front end portion 26 of the main body portion of the device 20 under a predetermined pressing force.

[0032] The fixing means 31 as used in the present invention, can be selected one from a group of screw, bolt and nut, adhesive or the like and on the other hand, the one end of the tag holding means which is fixedly connected to the tag attaching device 20 can be integrally connected to the main body of the tag attaching device 20 by molded method.

[0033] Further, as shown in Fig. 1 (F) (d), the tag holding means 27 may have a separate configuration in that a suitable holder member 90 having therein a suitable aperture portion 89, is provided on a surface of the front end portion 26 of the tag attaching device 20, while an insertion member 91 which can meet with the aperture portion 89 of the holder member 90, is provided on one end portion 28 of the tag holding means 27 serving as a fixed end thereof, and insertion member 91 can be removably supported by the holder member 90.

[0034] In addition, the configuration of the tip end portion of the enlarged tip portion 30 of the tag holding means may have, for example, as shown in Fig. 1 (F) (a) to (c), a configuration in a shape selected from a group consisting of a projecting shape, a spherical shape, a trapezoid shape, a cone type shape and a pyramid type shape and it is preferable that by utilizing such configuration for the enlarged tip portion 30, the tag 5, 400 can be easily inserted into a space formed between the tip end portion of the enlarged tip portion 30 and a surface of the front end portion 26 of the tag attaching device 20 while the tag 5, 400 is taking a sliding motion.

[0035] Further, in the present invention, as shown in Fig. 1 (F) (b), the enlarged tip portion 30 of the present invention can be made by rolling up a part of an end portion of the tag holding means 27.

[0036] On the other hand, as shown in Fig. 1 (G), it is preferable that a section existing between the fixed portion 28 of the tag holding means 27 and the enlarged portion 30 thereof being configured so that the section being apart from the surface of the main body portion of the tag holding means 20.

[0037] Note that it is preferable that a space 32 is formed therebetween.

[0038] In the present invention, the enlarged portion 30 of the tag holding means 27 is arranged at a position in the vicinity of the position on which the hollow needle 21 being arranged and the range thereof is not necessarily limited to a specific value but it can be practically set with respect to a size of the tag 5, 400 or a size of a tag attaching device 20 as used.

[0039] For example, as shown in Fig. 1 (F), a circular area 33 formed around the hollow needle 21 would be

a suitable range in which the enlarged portion 30 should be disposed.

[0040] And preferably, the enlarged portion 30 of the tag holding means 27 can be arranged at a position in the vicinity of the position on which the hollow needle 21 of the tag attaching device 20 being arranged and in a lateral direction with respect to the position on which the hollow needle 21 being arranged.

[0041] Further, it is also preferable that the enlarged portion 30 of the tag holding means 27 can be arranged at a position in the vicinity of the position on which the hollow needle 21 of the tag attaching device 20 being arranged and in a lateral direction with respect to the position on which the hollow needle 21 being arranged and further being arranged at the position disposed either one of on a left hand side, on a right hand side and on both sides of the hollow needle 21.

[0042] A decision whether the preferable position on which the tag holding means 27 should be arranged, would be a position on the right hand side with respect to the hollow needle 21 or would be a position on the left hand side thereof, should be determined depending upon the actual configuration of a tag attaching device as used.

[0043] Note that in the first embodiment of the present invention, as shown in Fig. 1 (B) which showing a front view of the tag attaching device 20, at a right side upper portion of the tag attaching device 2, as it is understood from Fig. 7, that a step-like portion 34 on which a plurality of the holding sections 3 of the tag attaching pins 1 are mounted in an accumulated condition, is provided and thus it is difficult to provide the tag holding means 27 of the present invention on a right hand side of the hollow needle and accordingly, in this embodiment, as shown in Fig. 1 (B), the tag holding means 27 should be disposed only on the left hand side of the hollow needle 21.

[0044] Note that the tag holding means 27 of the present invention has a function whereby the predetermined tag 5, 400 can be fixedly held on the surface of the front end portion 26 of the tag attaching device 20 in cooperation with the hollow needle 21 of the tag attaching device 20.

[0045] More specifically, in the tag attaching device 20 of the present invention, the tag attaching device 20 is configured so that by using a tag 5, 400 having a hole 6, 410 which is previously provided on the tag 5, 400 to be engaged with the filament section 4, 12 of the pin 1, 10, the hole being designed so as to have an diameter being slightly larger than that of the hollow needle 21, the tag 5, 400 is first engaged with the hollow needle 21 via the hole 6, 410 and thereafter the tag 5, 400 being rotated with respect to the hollow needle 21 as a rotation center of the tag so that a part of the tag 5, 400 being inserted into a portion formed between the enlarged portion 30 of the label holding means 27 and the surface of the front end portion 26 of the main body portion of the tag attaching device 20 whereby the tag 5, 400 being fixedly secured on the front end portion 26 of the tag

attaching device 20.

[0046] In the present invention, the position of the hole 6, 410 of the tag 5, 400, which is previously provided thereon, is not specifically limited to a certain position of the tag but it may be set at an upper center portion of the tag 5, 400, as shown in Fig. 8, while it may also be set at either upper right hand side portion or upper left hand side portion.

[0047] Note that as mentioned above, the position of the hole 6, 410 of the tag 5, 400, can be optionally decided with taking information about a size or a length of the tag 5, 400 as well as a configuration or size of the tag attaching device 20 into the account.

[0048] As explained above, in the present invention, after when the tag 5, 400 has been engaged with the hollow needle 21 through the hole 6, 410 of the tag 5, 400, the tag is rotated in a direction either one of a clockwise direction and an anti-clockwise direction so as to have a part of the tag inserted into a portion formed between the enlarged portion 30 of the tag holding means 27 and the surface of the front end portion 26 of the main body portion of the tag attaching device 20.

[0049] Accordingly, in the present invention, the tag can be effectively held on the tag attaching device 20.

[0050] Further in the present invention, for example, when a plurality of such tags should be attached to one same good, by engaging a plurality of the tags with the hollow needle 21, simultaneously, they can easily and effectively be attached to a desired good with the same operating manner as the operating manner used when one tag should be attached to a good.

[0051] In the present invention, when a tag attaching pin 1 is shot into a good, the holding section 3 of the tag attaching pin 1 is separated from the tag attaching device 20, with holding the tag 5, 400 thereon, and by doing this, the tag 5, 400 can be easily removed from the engagement with the enlarged portion 30 of the tag holding means 27.

[0052] Next, a second embodiment of the present invention will be explained hereunder with referring to Figs. 4 and 9 to 14.

[0053] A tag attaching pin 10 which is used in this embodiment of the present invention, has a configuration as shown in Fig. 4.

[0054] In this embodiment, each one of the tags attaching pins 10 having the configuration as mentioned above, can be used, individually, one by one, but in many cases, in order to improve working efficiency, a tag attaching pin sheet 600 as shown in Fig. 9 in which a plurality of tag attaching pins 10 are arranged in parallelism with each other can be used.

[0055] Note that as shown in Fig. 4, the sheet of tag attaching pins 600 has a configuration in that which comprises a plurality of unit tag attaching pins 10 are arranged adjacently to each other with the respective filament sections 12 being arranged in parallelism to each other, and further, a plurality of the insertion head section 13 which being also adjacently arranged to each

other or portions in the vicinity of the insertion head sections and a plurality of socket sections 15 also being adjacently arranged to each other or portions in the vicinity of the socket sections, are connected to each one of a pair of connecting bars 24 and 24', respectively, and the inserting head section 13 and the socket section or the portions located near by both sections, respectively, are respectively connected to each one of the connecting bars via joint members 11 and 11', respectively.

[0056] In the sheet of tag attaching pins 600, each one of the unit tag attaching pins 10 is made of a synthetic resin material such as ordinal nylon resin, polypropylene resin, polyester resin or the like and also the insertion head section 13, the socket section 15 and the filament section 12 thereof being integrally molded into one body.

[0057] Further the sheet of tag attaching pins 600 is mounted on a tag attaching device 20 as shown in Fig. 10 and each one of the unit tag attaching pins 10 can be shot out one by one, respectively, at every time when an operation lever 22 is operated, so that the respective unit tag attaching pins 10 can be attached to a good.

[0058] Fig. 10 shows a condition in that the tag attaching pin sheet 600 as used in this embodiment is mounted on a tag attaching device 20.

[0059] On the other hand, Fig. 11 shows a top plan view of a tag attaching device 20 as used in this embodiment, and it shows that a pair of vertical grooves 40 and 41 into which the above-mentioned connecting bars 24 and 24' of the tag attaching pin sheet 600, being inserted, respectively, are provided on both side of the tag attaching device 20.

[0060] For example, the connecting bar 24' to which the socket sections 15 of the tag attaching pin sheet 600 are connected, is inserted into the vertical groove 40 while the connecting bar 24 to which the insertion head section 13 of the tag attaching pin sheet 600 are connected, is inserted into the vertical groove 41.

[0061] On the other hand, the tag attaching device 20 as used in this embodiment is provided with a shooting pin 42 which is driven by the operational lever 22 on a side portion of the vertical groove 41 so that the inserting head section 13 is cut off from the joint member 11' connected to the connecting bar 24 and thereafter, it can be pushed out forwardly along an inside pass of the cylindrical hollow needle 21.

[0062] On the other hand, the socket section 15 thereof is pushed out forwardly along an inside pass of the curved cylindrical guide tube portion 43 with a suitable pushing means 25, for example, a pushing means with a gear-rack mechanisms, and thereafter it will meet and be coupled with the inserting head section 13 at a tip end portion 44 of the guide tube portion 43.

[0063] In the tag attaching device 20 as used in this embodiment, as the same manner as used in the previous embodiment, first, a hole 410 of the tag 400 is engaged with the hollow needle 21, as shown in Fig. 12, and thereafter, by operating the operational lever 22, each one of the filament section 12 of the respective tag

attaching pins 10 is attached to a good by reducing the filament section into a looped configuration.

[0064] However, this embodiment has the same problem as mentioned in the previous embodiment.

[0065] Therefore, in order to resolve the above-mentioned problem, especially if when a length of the hollow needle 21 of the tag attaching device 20, projected from the surface of the front end portion 26, would be elongated, a distance formed between the hollow needle 21 and the tip end portion of the curved cylindrical guide tube portion 43 will be shortened since the curved cylindrical guide tube portion 43 of the tag attaching device 20 and which guiding the socket section 15 is disposed just in the opposite position to the hollow needle 21, so that it is become difficult to hook the curved cylindrical guide tube portion 43 of the tag attaching device 20 on a desired portion of a good necessary to attach the tag thereto, leading a generation of many restrictions on working operation in attaching tag operations and causing the working efficiency to be reduced.

[0066] Accordingly, in the present embodiment, as shown in Fig. 13, the tag holding means 27 of the present invention is provided on a position in the vicinity of the position in which the hollow needle 21 is disposed whereby the above-mentioned problem can be completely resolved without elongating the projection length of the hollow needle.

[0067] Note that in this embodiment, each one of a configuration of the tag holding means 27 and a position on which the tag holding means 27 should be disposed as well as a configuration of the tag 410 is substantially identical to those as shown in the previous embodiment, but a position on which the tag holding means 27 can be arranged in this embodiment is preferably provided on the right hand side with respect to the position of the hollow needle 21 seeing the front end portion 26 of the tag attaching device 20 from its front side.

[0068] Note that since the tag attaching device 20 of this embodiment is provided with a curved guide tube 43, it is difficult to dispose the tag holding means 27 on the left hand side area with respect to the hollow needle 21.

[0069] In this embodiment, as shown in Fig. 14, first, a hole 410 of the tag 400 is engaged with the hollow needle 21 with a condition in that the tag 400 is slightly upraised in left hand side direction, and thereafter, the tag 400 is rotated in the anti-clockwise direction, so that an upper right hand side portion of the tag 400 is inserted into a space formed between the tip end portion of the enlarged tip portion 30 of the tag holding means 27 and a surface of the front end portion 26 of the tag attaching device 20 while the tag 400 is taking a sliding motion and thus the tag 400 can be temporally and securely held on the tag attaching device 20.

[0070] Accordingly, also in this embodiment, the same advantages and the same effects as obtained in the previous can be obtained and further the projecting length of the hollow needle 21 can be set at shortened

level so that the distance formed between the tip end portion 44 of the curved guide portion 43 and the hollow needle 21 can be set at relatively an elongated length.

[0071] Therefore, in this embodiment, there is no problem as mentioned in the past such as a working capability in performing the tag attaching operation is restricted and working efficiency therefore is reduced.

[0072] Next, a third embodiment of the present invention will be explained hereunder with reference to Figs. 15 to 17.

[0073] In the third embodiment of the present invention, the tag attaching device 20 and the tag attaching pin sheet 600 comprising a plurality of unit tag attaching pins 10, each having respective configurations substantially identical to those as shown in the second embodiment of the present invention, are also used but in order to realize in minimizing a size of the tag attaching device 20 and in effectively preventing a generation of jamming conditions in that a plurality of adjacently arranged tag attaching pins are entangled with each other during the shooting operation for individual tag attaching pins so that the problem causing the tag attaching pin shooting operation impossible, in this embodiment, the tag attaching device has a different configuration from those of other embodiments in that, referring to Fig. 11, a part of a top surface of the tag attaching device 20, on which a vertical groove, that is an insertion slit 41 in which the connecting bar 24 to which a plurality of the inserting head sections 13 are connected, is inserted, is formed at a lower level in vertical direction comparing with the level at which a part of a top surface of the tag attaching device 20, on which a vertical slit, that is an insertion slit 40 in which the connecting bar 24' to which a plurality of the socket sections 15 are connected, is inserted, is formed.

[0074] Accordingly, in this embodiment, a width of the tag attaching device 20 can be remarkably shortened so that a minimized tag attaching device can be realized.

[0075] Therefore, as shown in Fig. 16, the tag holding means 27 can be disposed at a position in the vicinity of the place on a surface of the front end portion 26 of the tag attaching device 20 and on which the curved guide means 43 is provided or in the vicinity of the portion beneath the position on the curved guide means 43 is provided.

[0076] In this embodiment, as shown in Fig. 18(A), a tag 400 is brought into a position just in front of the hollow needle 21 utilizing a space formed between the curved guide means 43 and the hollow needle 21 each being oppositely arranged to each other, and then the tag 400 is easily engaged with the hollow needle 21 via the hole 410 formed on the tag.

[0077] After that, as shown in Fig. 18(B), under this condition, the tag is rotated in the clockwise direction so that an upper left hand side portion of the tag 400 is inserted into a space formed between the tip end portion of the enlarged tip portion 30 of the tag holding means 27 and a surface of the front end portion 26 of the tag

attaching device 20, while the tag 400 is taking a sliding motion and thus the tag 400 can be temporally and securely held on the tag attaching device 20.

[0078] Note that the advantages or effects as obtained by the third embodiment are substantially similar to those as obtained in the second embodiment as mentioned above.

Effect of the Invention

[0079] Since the tag attaching device 20 has a technical features as mentioned above, and accordingly, the tag attaching device of the present invention can enable one of the operator's hands other than his hand which is used for operating the tag attaching device to be used, free for separate necessary operation, when a predetermined tag should be attached to a predetermined good utilizing the tag attaching device 20.

Claims

1. A tag attaching device for attaching a tag attaching pin comprising a filament section, an inserting head section provided at one end of the filament section, and a socket section or holding section provided at the another end of said filament section, onto a predetermined good with a tag engaged on said filament section, by inserting said inserting head section of said pin into a hollow needle provided on said tag attaching device and penetrated through said good and by pushing said inserting head out of said hollow needle utilizing a predetermined pin pushing means so as to have said inserting section attached to a surface of said good with said tag or by inserting said inserting head section thereof into a hollow needle provided on said tag attaching device and by pushing said inserting head out of said hollow needle utilizing a predetermined pin pushing means so as to have said inserting section engaged with said socket section of said pin with said tag through a part of said good, wherein said device being provided with a tag holding means for tentatively holding said tag on said device, on a front end portion of said device from a surface of which said hollow needle being projected and at a position in the vicinity of the position from which said hollow needle being projected.
2. A tag attaching device according to claim 1, wherein said tag holding means is made either one of a metallic material and a synthetic resin material.
3. A tag attaching device according to claim 2, wherein said synthetic resin material is polyacetal.
4. A tag attaching device according to claim 2, wherein said metallic material is spring steel SUS.
5. A tag attaching device according to any one of claims 1 to 4, wherein said tag holding means having a configuration in that one end portion of said tag holding means is solidly fixed at a desirable position in the vicinity of the position at which said hollow needle being provided on a surface on a front end portion of a main body portion of said device, utilizing a desirable fixing means, while another end portion thereof being provided with an enlarged tip portion expanding at least in a direction facing to said surface of said front end portion of said main body portion of said device and said enlarged portion further being detachably impinged on said surface of said main body portion of said device under a predetermined pressing force.
6. A tag attaching device according to any one of claims 1 to 5, wherein said enlarged tip portion of said tag holding means having a configuration in a shape selected from a group consisting of a projecting shape, a spherical shape, a trapezoid shape, a cone type shape and a pyramid type shape.
7. A tag attaching device according to any one of claims 1 to 6, wherein a section existing between said fixed portion of said tag holding means and said enlarged portion thereof being configured so that said section being apart from said surface of said main body portion of said tag holding means.
8. A tag attaching device according to any one of claims 1 to 7, wherein said enlarged portion of said tag holding means being arranged at a position in the vicinity of the position on which said hollow needle being arranged.
9. A tag attaching device according to any one of claims 1 to 8, wherein said enlarged portion being arranged at a position in the vicinity of the position on which said hollow needle being arranged and in a lateral direction with respect to said position on which said hollow needle being arranged.
10. A tag attaching device according to any one of claims 1 to 9, wherein said enlarged portion being arranged at a position in the vicinity of the position on which said hollow needle being arranged and in a lateral direction with respect to said position on which said hollow needle being arranged and further being arranged at said position disposed either one of on a left hand side, on a right hand side and on both sides of said hollow needle.
11. A tag attaching device according to any one of claims 1 to 10, wherein said tag holding means having a function to hold at least one of said predetermined tag on said front end portion of said tag attaching device in cooperation with said hollow nee-

dle of said tag attaching device.

12. A tag attaching device according to any one of claims 1 to 11, wherein said tag attaching device being configured so that by using a tag having a hole which is previously provided on said tag to be engaged with said filament section of said pin, said hole being designed so as to have an diameter being slightly larger than that of said hollow needle, said tag is first engaged with said hollow needle via said hole and thereafter said tag being rotated with respect to said hollow needle as a rotation center of said tag so that a part of said tag being inserted into a portion formed between said enlarged portion of said label holding means and said surface of said main body portion of said tag attaching device whereby said tag being fixedly secured on said front end portion of said tag attaching device.
13. A tag attaching device according to any one of claims 1 to 12, wherein said tag attaching device being configured so that after when said tag has been engaged with said hollow needle through said hole of said tag, said tag is rotated in a direction either one of a clockwise direction and an anti-clockwise direction so as to have a part of said tag inserted into a portion formed between said enlarged portion of said tag holding means and said surface of said main body portion of said tag attaching device.
14. A tag attaching device according to any one of claims 1 to 13, wherein said label holding means is formed integrally with said tag attaching device.
15. A tag attaching device according to any one of claims 1 to 14, wherein said fixedly secured end portion of said label holding means is attached to said front end portion of said tag attaching device by removably inserting said one end portion thereof to be fixedly secured thereto into a holder member provided at a position on said front end portion of said tag attaching device and in the vicinity of the position from which said hollow needle being projected.
16. A tag attaching device according to any one of claims 1 to 15, wherein a plurality of tags are simultaneously held between said label holding means and said surface of the front end portion of said tag attaching device.

55

Fig. 1

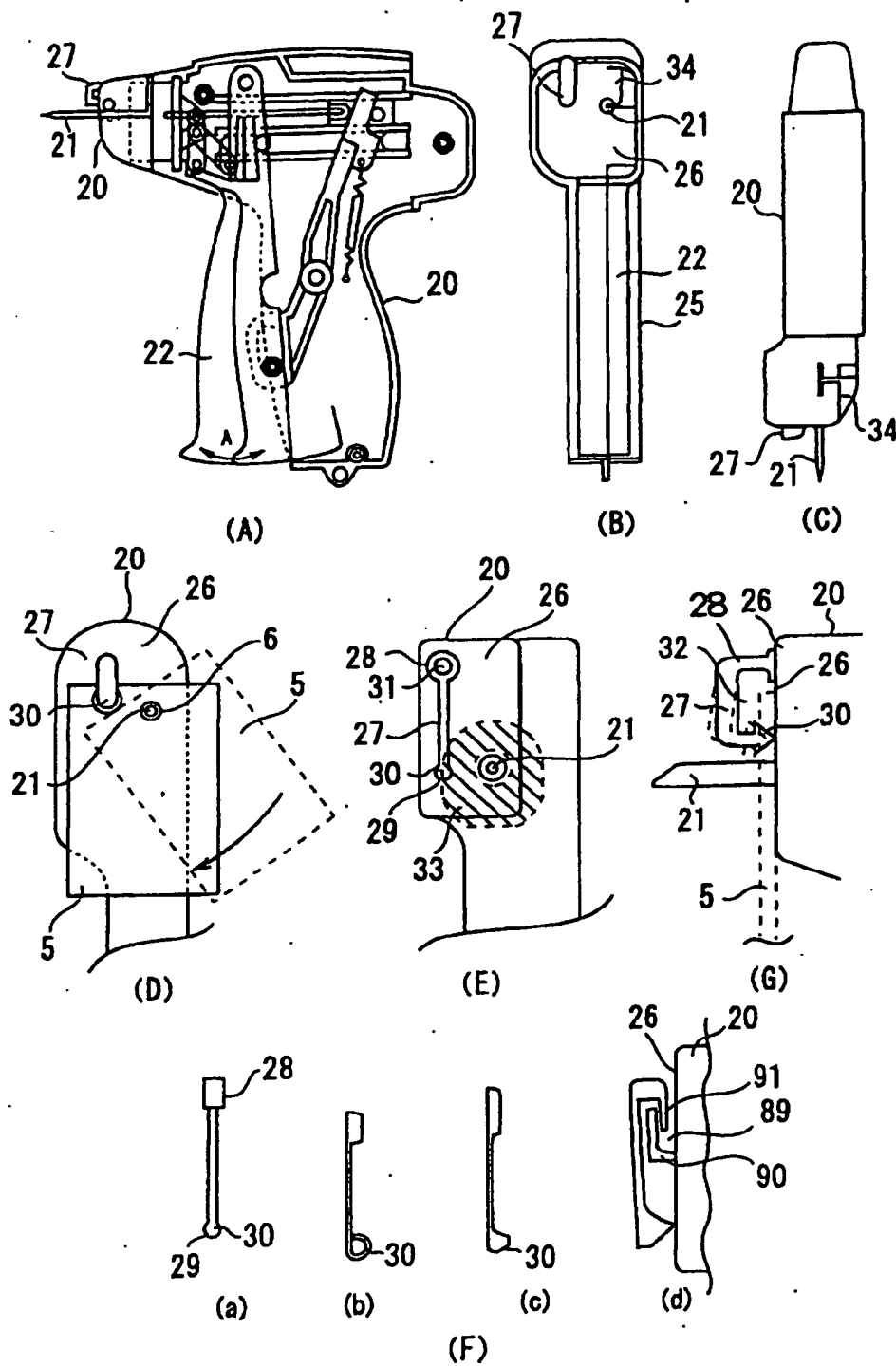


Fig. 2

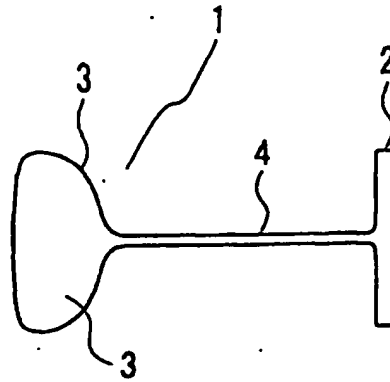


Fig. 3

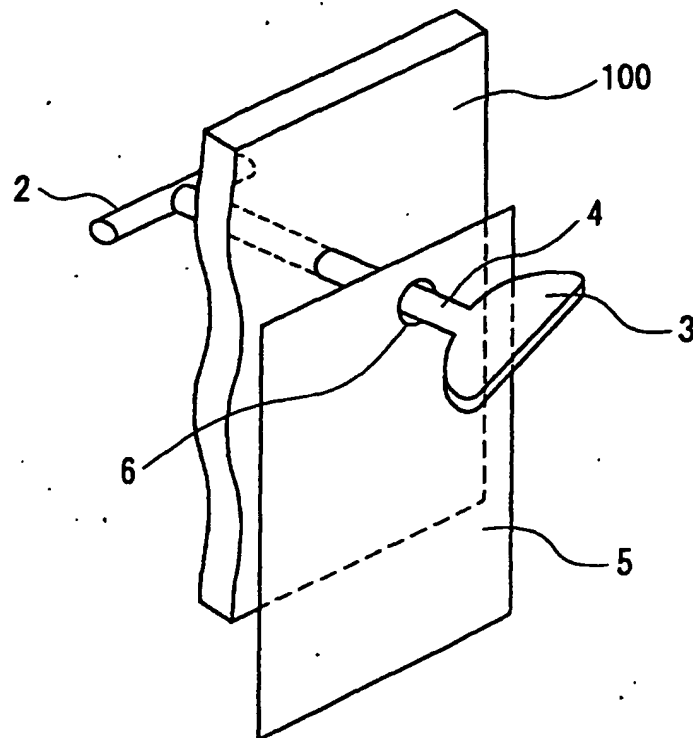


Fig. 4

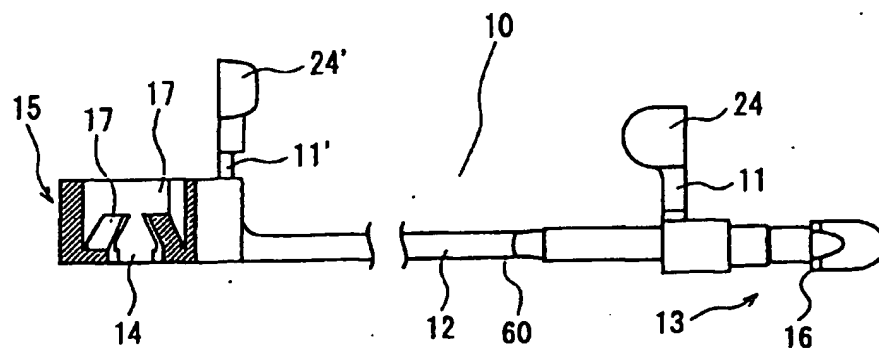


Fig. 5

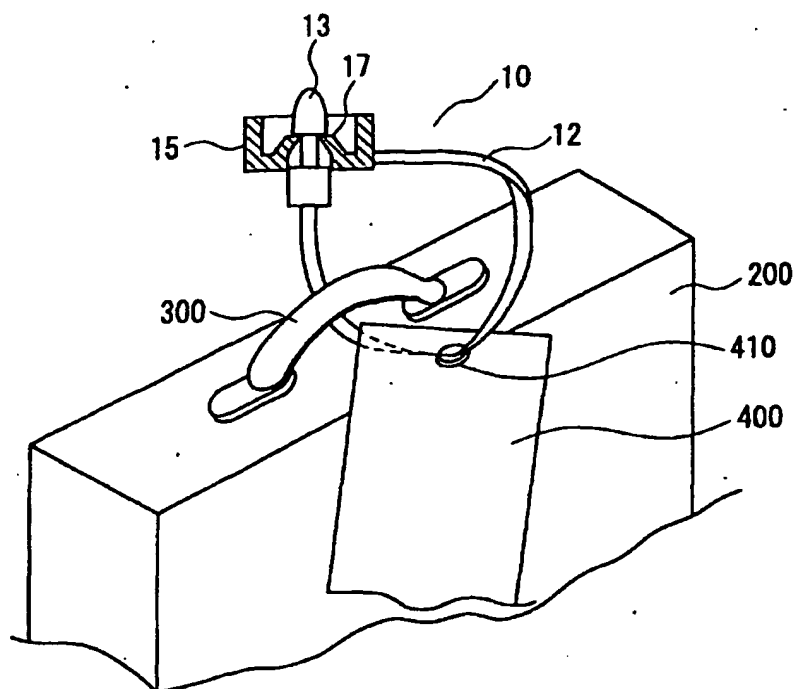


Fig. 6

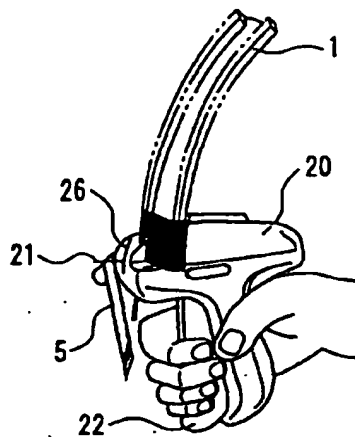


Fig. 7

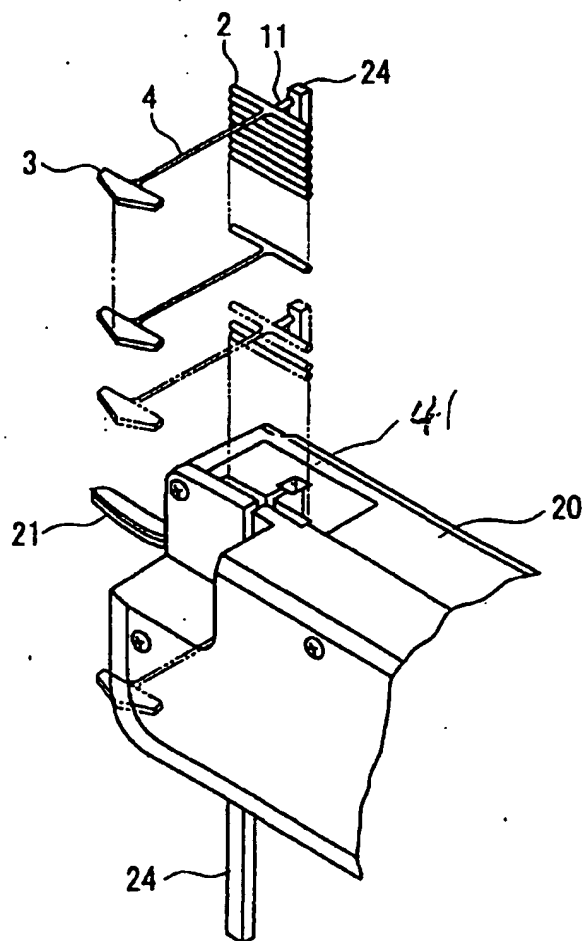


Fig. 8

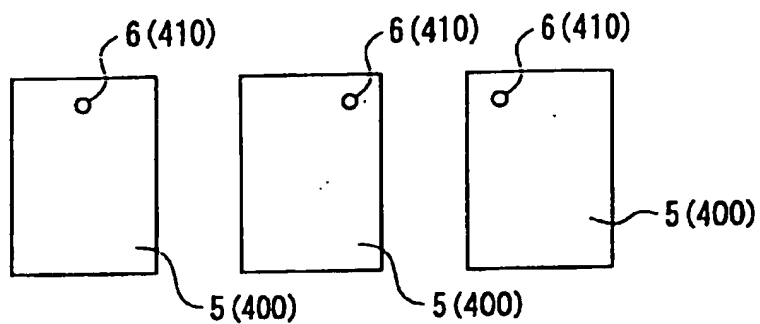


Fig. 9

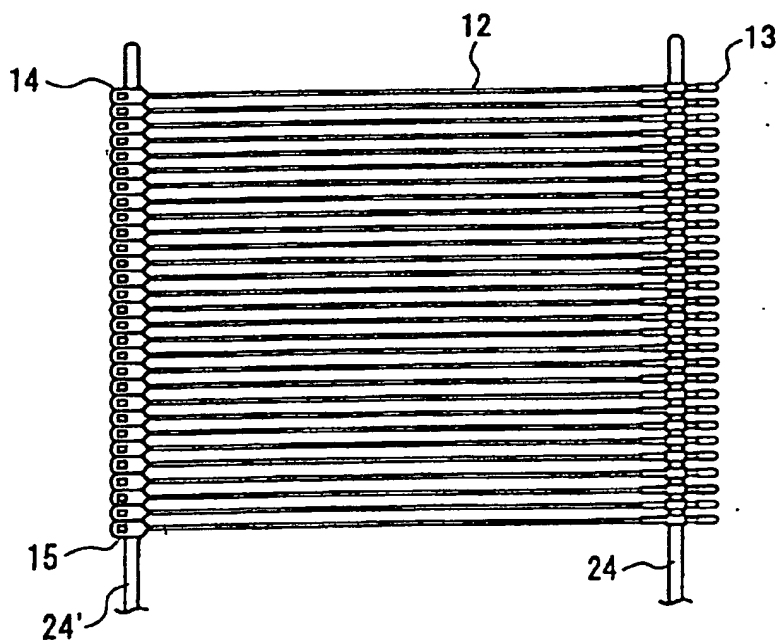


Fig. 10

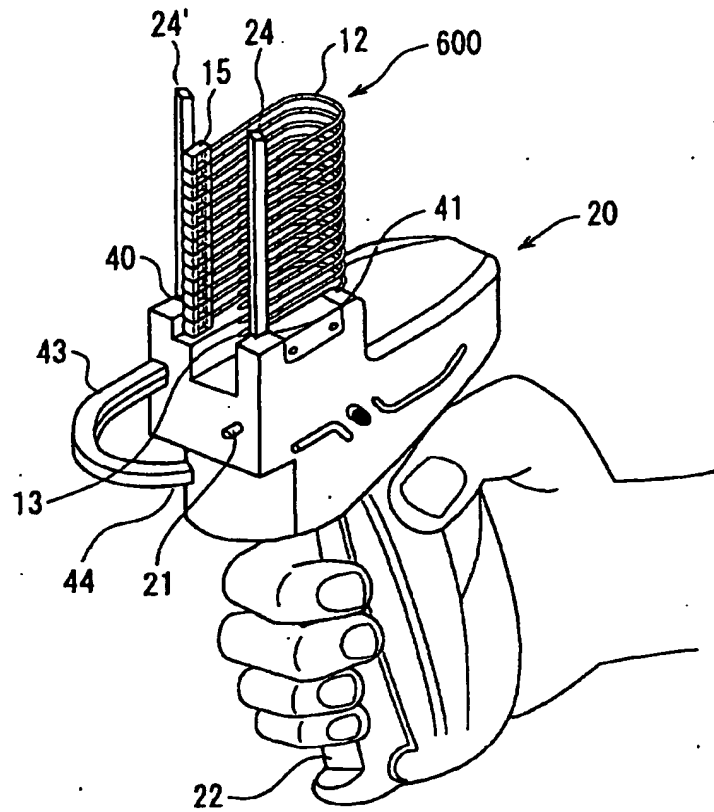


Fig. 11

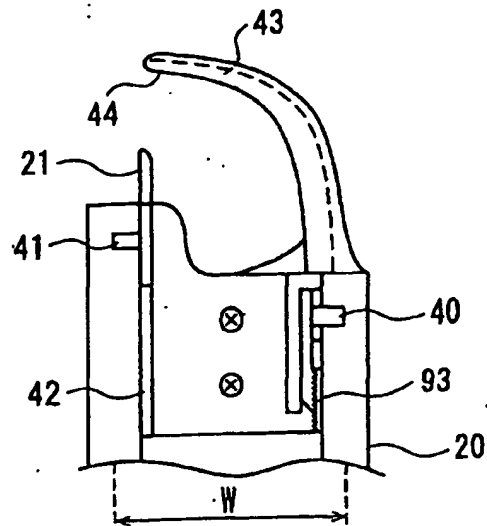


Fig. 12

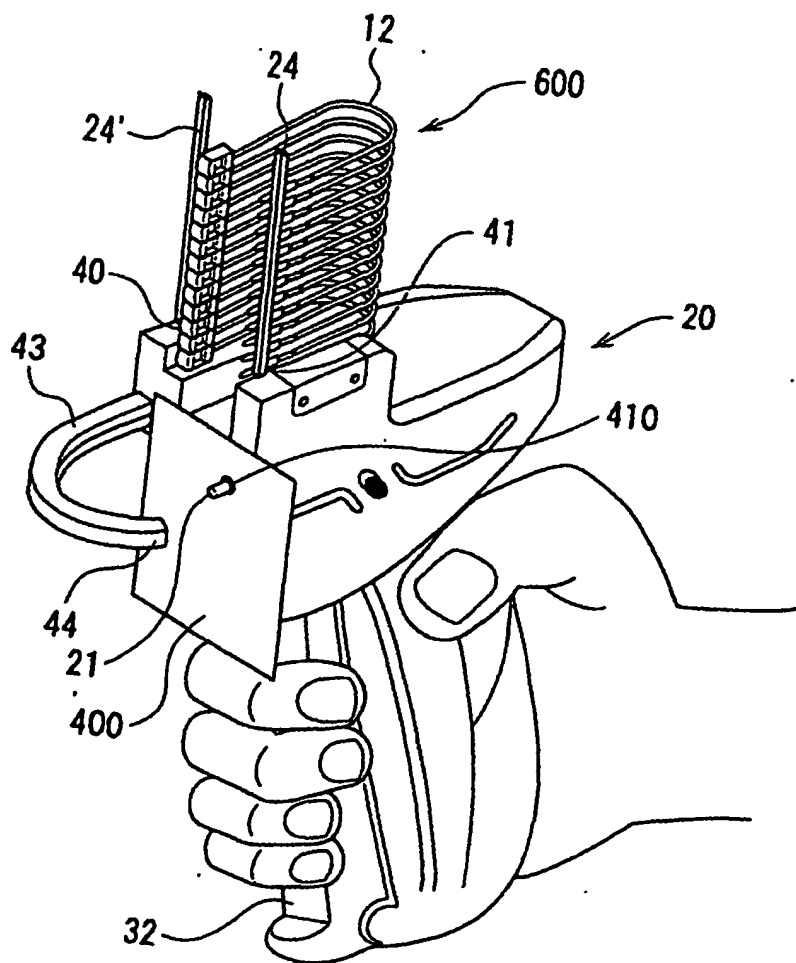


Fig. 13

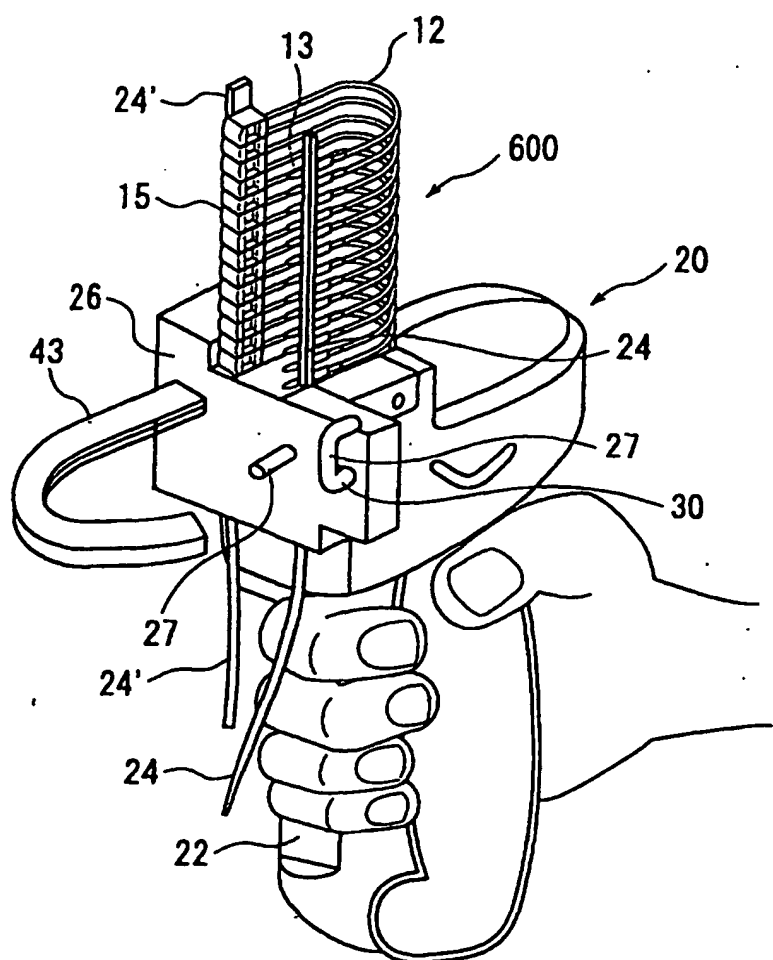


Fig. 14

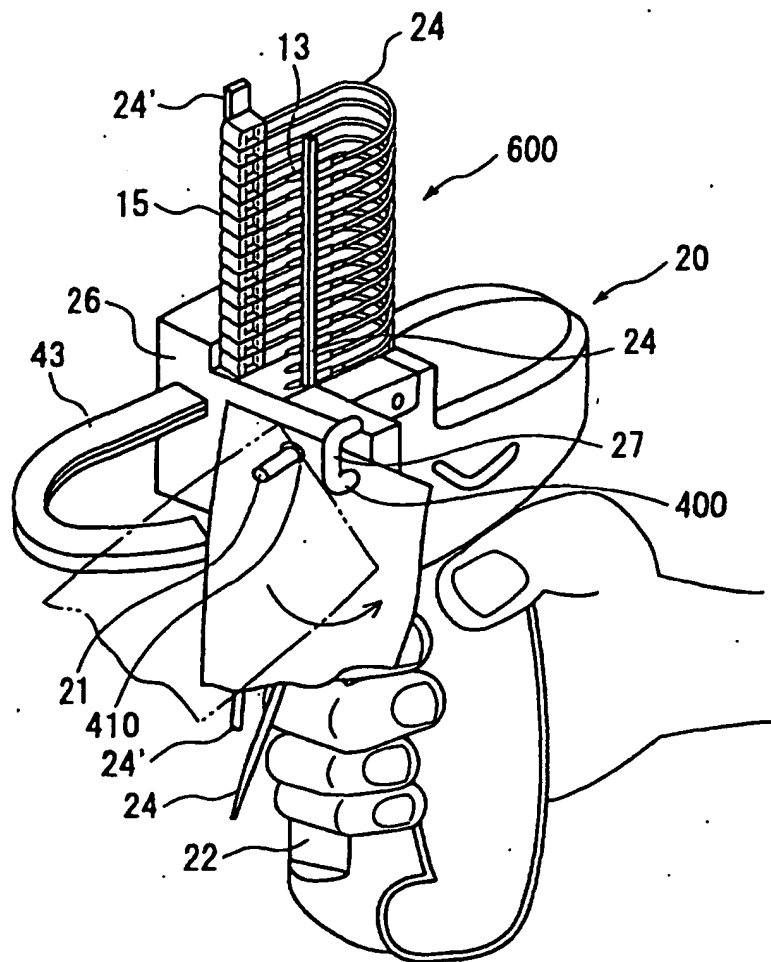


Fig. 15

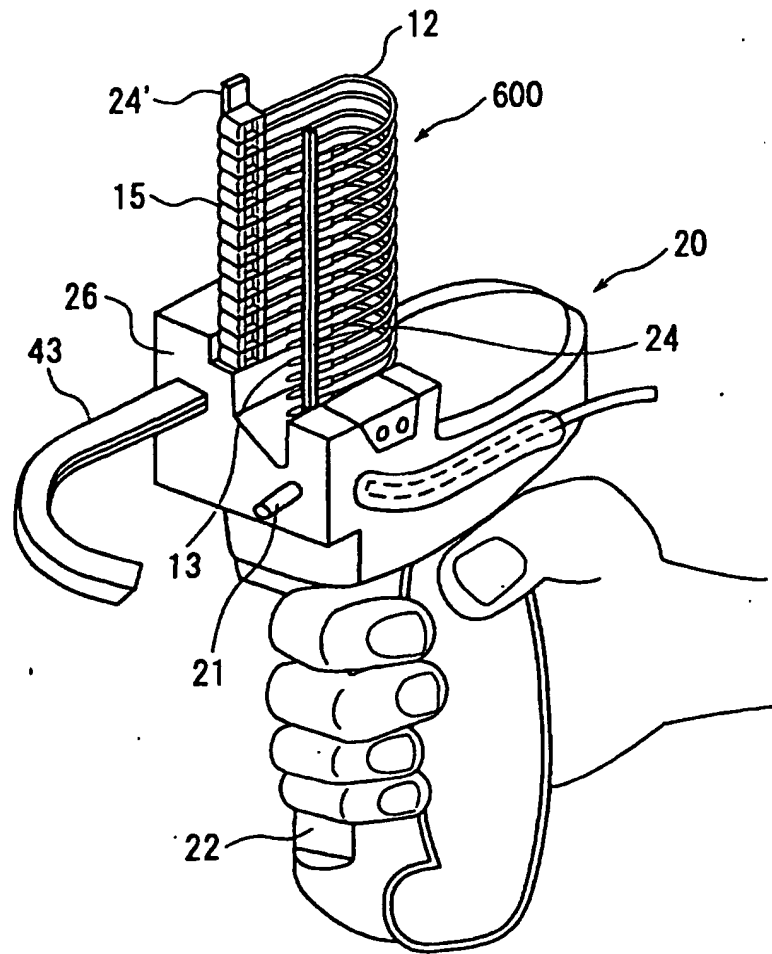


Fig. 16

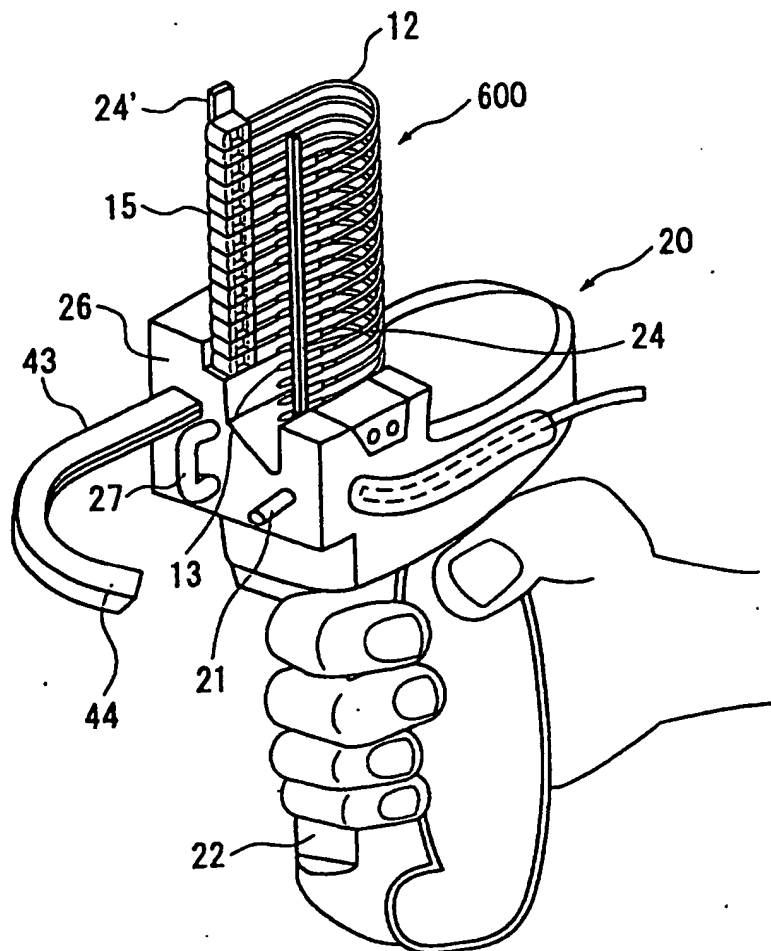


Fig. 17

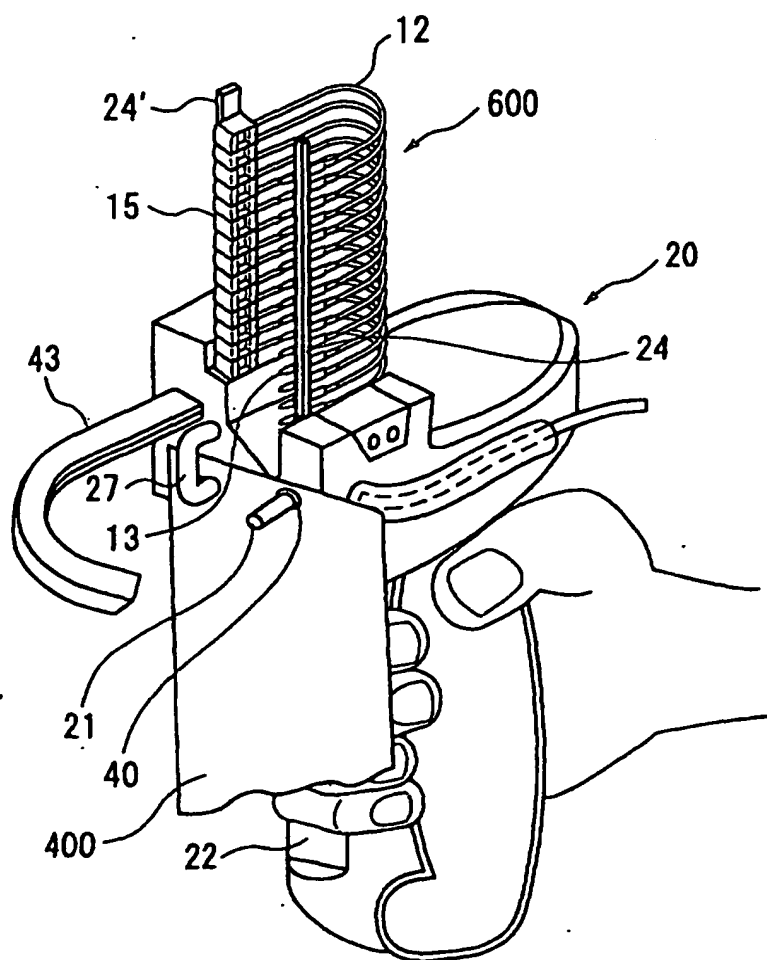
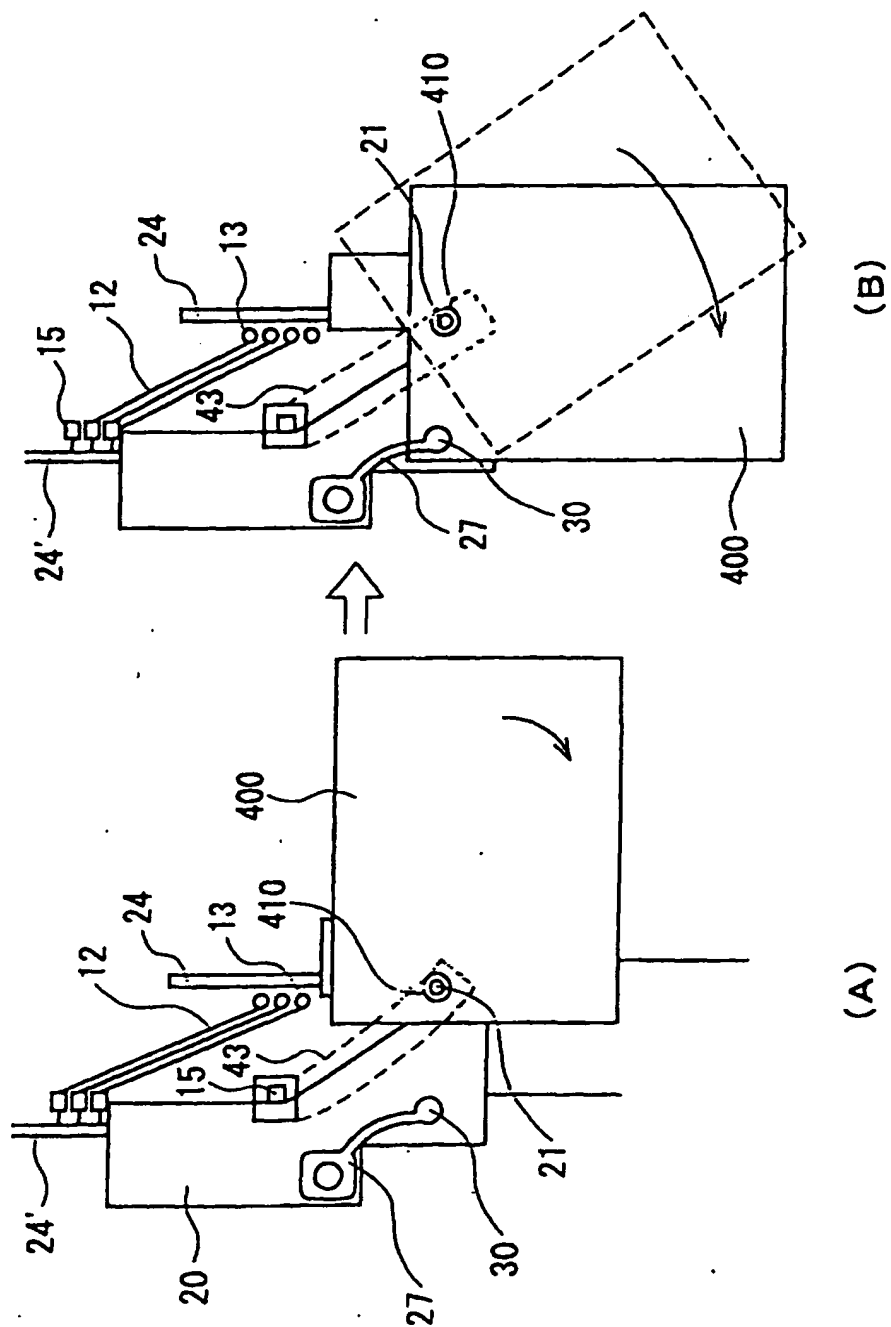


Fig. 18



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP02/01935

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl¹ B65C7/00, G09F3/00, G09F3/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl¹ B65C7/00, G09F3/00, G09F3/16

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

| | | | |
|---------------------------|-----------|----------------------------|-----------|
| Jitsuyo Shinan Koho | 1922-1996 | Jitsuyo Shinan Toroku Koho | 1996-2002 |
| Kokai Jitsuyo Shinan Koho | 1971-2002 | Toroku Jitsuyo Shinan Koho | 1994-2002 |

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|---------------------------------------|
| Y A | JP, 2-45340, A (Yoshie WATANABE), 15 February, 1990 (15.02.90), Full text; all drawings (Family: none) | 1, 2, 11, 14 3-10, 12-13, 15-16 |
| P, X | JP, 2001-192009, A (K.K. Kotekkusu), 17 July, 2001 (17.07.01), Full text; all drawings (Family: none) | 1, 2, 11, 16 |

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
20 March, 2002 (20.03.02)Date of mailing of the international search report
09 April, 2002 (09.04.02)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

Form PCT/ISA/210 (second sheet) (July 1998)

①9 RÉPUBLIQUE FRANÇAISE
INSTITUT NATIONAL
DE LA PROPRIÉTÉ INDUSTRIELLE
PARIS

①1 N° de publication :
(à n'utiliser que pour les
commandes de reproduction)

2 775 876

②1 N° d'enregistrement national : 98 03099

⑤1 Int Cl⁶ : A 44 B 15/00, G 09 F 3/14

⑫

DEMANDE DE BREVET D'INVENTION

A1

②2 Date de dépôt : 11.03.98.

③0 Priorité :

④3 Date de mise à la disposition du public de la
demande : 17.09.99 Bulletin 99/37.

⑤6 Liste des documents cités dans le rapport de
recherche préliminaire : *Se reporter à la fin du
présent fascicule*

⑥0 Références à d'autres documents nationaux
apparentés :

⑦1 Demandeur(s) : VALEO SECURITE HABITACLE
Société anonyme — FR.

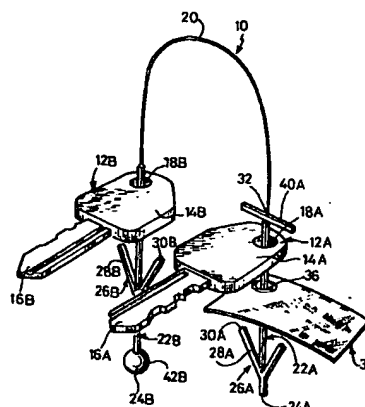
⑦2 Inventeur(s) : REINER PHILIPPE.

⑦3 Titulaire(s) :

⑦4 Mandataire(s) : VALEO MANAGEMENT SERVICES.

⑤4 AGENCEMENT POUR L'APPARIEMENT DE DEUX CLEFS APPARTENANT A UN JEU DE CLEFS D'UN
VEHICULE AUTOMOBILE ET DISPOSITIF POUR LA MISE EN OEUVRE DE L'AGENCEMENT.

⑤7 L'invention propose un agencement pour l'apparie-
ment d'au moins une première (12A) et une deuxième (12B)
clefs appartenant à un jeu de clefs d'un véhicule automobile
et dont chacune comporte une tête de clef (14A, 14B) dans
laquelle est formé un trou (18A, 18B) pour le passage d'un
lien (10, 22A, 22B) qui peut être rompu ou coupé pour sépa-
rer les clefs appariées (12A, 12B), caractérisé en ce que le
lien est un cordon dont chacun des premier et deuxième
tronçons d'extrémité (12A, 12B) s'étend à travers le trou
(18A, 18B) de la tête (14A, 14B) de la première clef (12A),
de la deuxième clef (12B) respectivement, et en ce que les
première et deuxième extrémités libres (24A, 26A, 24B,
26B) du cordon sont de dimension supérieure à celle du trou
(18A, 18B) de la tête de la première clef (12A), de la secon-
de clef (12B) respectivement.



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La présente invention concerne un agencement pour l'appariement d'au moins deux clefs.

L'invention concerne plus particulièrement un agencement pour l'appariement d'au moins une première clef et une deuxième clef appartenant à un jeu de clefs d'un véhicule automobile.

Les différentes serrures et/ou le dispositif de verrouillage de la colonne de direction et le contacteur pour la mise en marche d'un véhicule automobile nécessitent de faire appel à plusieurs clefs d'une conception classique mécanique, ou réalisées sous la forme de clefs dites "électroniques", dont certaines doivent être appariées tout au long du processus de fabrication des équipements jusqu'à la livraison de ceux-ci aux constructeurs automobiles et/ou jusqu'à la livraison du véhicule à son acheteur.

A cet effet, il est connu un agencement pour l'appariement de deux clefs dont chacune comporte une tête de clef dans laquelle est formé un trou pour le passage d'un lien qui peut être rompu ou coupé pour séparer les clefs appariées. Dans un tel agencement connu, le lien se présente sous la forme d'un cordon en boucle fermée qui est introduit, avant sa fermeture, dans les deux trous de tête de clef.

Cet agencement présente plusieurs inconvénients.

Tout d'abord, dans le cadre de l'automatisation de l'appariement, il est très difficile de vérifier que l'accrochage mutuel des clefs au moyen du lien en boucle est réalisé, c'est-à-dire que le cordon a bien été introduit dans les deux trous, puis a été fermé en boucle.

De plus, un tel agencement ne permet pas d'associer aisément une étiquette à l'une des deux clefs de manière que cette étiquette reste associée à la clef, même après la rupture du cordon constituant le lien, l'étiquette étant de préférence associée à l'une des deux clefs appelée clef "maître" qui se différencie de l'autre clef, notamment dans le cas d'une clef dite "électronique".

Afin de remédier à ces inconvénients, l'invention propose un agencement pour l'appariement d'au moins une première et une deuxième clefs appartenant à un jeu de clefs d'un véhicule automobile et dont chacune comporte une tête de clef dans laquelle est formé un trou pour le passage d'un lien qui peut être rompu ou coupé pour séparer les clefs appariées, caractérisé en ce que le lien est un cordon dont chacun des premier et deuxième tronçons d'extrémité s'étend à travers le trou de la tête de la première clef, de la deuxième clef respectivement, et en ce que les première et deuxième extrémités libres du cordon sont de

dimension supérieure à celle du trou de la tête de la première clef, de la seconde clef respectivement.

Selon d'autres caractéristiques de l'invention :

- le lien est réalisé dans un matériau déformable élastiquement, et chacun des premier et second tronçons d'extrémité du cordon est conformé en une fourche comportant au moins un brin de retenue, réalisé venu de matière avec le cordon, qui s'étend transversalement par rapport à ce dernier et qui est susceptible d'être replié longitudinalement le long du cordon pour être introduit, avec le cordon, à travers le trou de la tête de la clef correspondante ;
 - le brin de retenue forme un angle aigu par rapport au cordon, et son extrémité libre est située en arrière par rapport à l'extrémité libre du cordon ;
 - chaque fourche comporte deux brins de retenue symétriques et transversalement opposés par rapport au cordon ;
 - le premier tronçon d'extrémité du cordon est délimité par au moins une barre d'arrêt, réalisée venue de matière avec le cordon, qui s'étend transversalement par rapport au cordon, et une étiquette d'identification de clef, comportant un trou traversé par le cordon, et la tête de la première clef, sont disposées longitudinalement entre la première extrémité libre du cordon et la barre d'arrêt ;
 - l'étiquette est disposée entre la première extrémité libre du cordon et la tête de la première clef ;
 - le premier tronçon d'extrémité du cordon est délimité par deux barres d'arrêt symétriques et opposées qui s'étendent perpendiculairement par rapport au cordon ;
 - l'une des deux extrémités libres du cordon comporte des moyens de détrompage pour son identification par rapport à l'autre extrémité libre et son appariement avec l'une des deux clefs ;
 - le lien est réalisé en matière plastique moulée, et la section des deux tronçons d'extrémité du cordon est supérieure à la section du tronçon intermédiaire qui les relie entre eux ;
 - le tronçon intermédiaire du cordon, qui relie entre eux les deux tronçons d'extrémité, comporte une amorce de rupture du cordon.
- L'invention propose aussi un dispositif pour l'appariement d'au moins deux clefs avec un agencement selon l'invention, caractérisé en ce qu'il comporte un premier et un deuxième socle horizontal comportant chacun une empreinte complémentaire de la tête de la première clef, de la seconde clef respectivement, un trou débouchant verticalement formé

dans le fond de l'empreinte et agencé en regard du trou de la tête de la clef posée dans l'empreinte, et une encoche transversale débouchante dans le trou vertical pour l'extraction du lien après l'appariement des deux clefs.

5 Selon d'autres caractéristiques du dispositif :

- le premier socle comporte une fente horizontale formée dans son épaisseur et qui débouche transversalement pour recevoir une étiquette dont le trou est aligné avec le trou vertical du socle ;

- chaque tronçon d'extrémité du cordon est introduit
10 verticalement de haut en bas dans le trou de la tête de clef correspondante, et le dispositif comporte, au droit de chaque socle, un capteur pour détecter la présence de l'extrémité libre correspondante du cordon après appariement des clefs.

15 D'autres caractéristiques et avantages de l'invention apparaîtront à la lecture de la description détaillée qui suit pour la compréhension de laquelle on se reportera aux dessins annexés dans lesquels :

- la figure 1 est une vue schématique en perspective qui illustre deux clefs de véhicule automobile et une étiquette appariées
20 selon un agencement conforme aux enseignements de l'invention ;

- la figure 2 est une vue en plan du lien utilisé pour l'appariement de deux clefs conformément à l'agencement selon l'invention ;

- la figure 3 est une vue schématique d'un dispositif permettant
25 l'automatisation et l'industrialisation de l'appariement de deux clefs grâce à l'agencement selon l'invention ; et

- la figure 4 est une vue schématique en section transversale verticale de l'un des deux socles du dispositif illustré à la figure 3.

30 L'agencement illustré à la figure 1 est constitué pour l'essentiel par un lien 10 qui permet de relier entre elles deux clefs appariées parmi lesquelles une première clef 12A et une seconde clef 12B, qui sont ici des clefs mécaniques, dont chacune comporte une tête de clef 14A, 14B et un corps de clef 16A, 16B.

35 Chacune des têtes de clef 14A, 14B comporte, de manière connue, un trou débouchant 18A, 18B.

Chacun des trous 18A, 18B a notamment pour fonction de permettre ultérieurement le passage d'un anneau appartenant par exemple à un porte-clefs.

Le lien 10 est une pièce moulée en matière plastique constituée pour l'essentiel par un cordon à section carrée comportant un tronçon intermédiaire 20 en forme de demi-cercle qui relie entre eux un premier tronçon d'extrémité 22A et un second tronçon d'extrémité 22B.

5 Chaque tronçon d'extrémité 22A, 22B est réalisé venu de matière par moulage avec le tronçon intermédiaire 20 et il se présente sous la forme d'un tronçon de cordon à section carrée plus importante que celle du tronçon intermédiaire 20 de façon à lui conférer une plus grande rigidité.

10 Au voisinage de son extrémité libre, c'est-à-dire de son extrémité inférieure 24A, 24B en considérant la figure 1, chaque tronçon d'extrémité 22A, 22B est conformé en une fourche 26A, 26B.

Chaque fourche est constituée par deux brins de retenue 28A, 28B qui s'étendent transversalement et symétriquement de manière opposée de part et d'autre du tronçon d'extrémité 22A, 22B en étant inclinés par rapport à ce tronçon d'extrémité sensiblement rectiligne 22A, 22B vers l'arrière, c'est-à-dire en éloignement de l'extrémité libre 24A, 24B.

20 Ainsi, chaque extrémité est conformée en une fourche 26A, 26B se présentant sous la forme d'une pointe de flèche.

Chacun des brins de retenue 28A, 28B est susceptible d'être replié, temporairement et par déformation élastique de la matière plastique, longitudinalement le long de tronçons d'extrémité 22A, 22B du cordon de manière que l'ensemble de chaque fourche puisse être introduite axialement, verticalement de haut en bas en considérant la figure 1, à travers le trou correspondant 18A, 18B de l'une des clefs 12A, 12B.

30 Dans la position appariée des clefs 12A, 12B illustrée à la figure 1, les brins de retenue 28A, 28B occupent leur position normale de repos dans laquelle ils sont écartés transversalement, c'est-à-dire que leurs extrémités libres 30A, 30B s'étendent, au moins l'une d'entre elles, en regard d'une portion en vis-à-vis d'une face, inférieure en considérant la figure 1, de la tête de clef 14A, 14B associée en s'opposant ainsi à tout échappement ou perte de la clef, les deux clefs 35 restant appariées par le lien 10 tant que ce dernier n'est pas rompu ou coupé.

Afin de faciliter la rupture ou la coupe du lien 10 en vue de séparer les deux clefs 12A, 12B préalablement appariées conformément aux enseignements de l'invention, on peut prévoir une amorce de

rupture 32, par exemple sous la forme d'une réduction supplémentaire de la section du tronçon intermédiaire 20 du cordon.

Conformément à un autre aspect de l'invention, une étiquette 34 peut être associée et appariée à l'une des deux clefs 12A, 12B, ici
5 par exemple à la première clef 12A.

A cet effet, selon un agencement connu, l'étiquette 34 comporte un trou 36 à travers lequel passe le premier tronçon d'extrémité 22A du lien 10.

Il est souhaitable que l'étiquette 34 soit associée à la première
10 clef 12A. A cet effet, il est d'abord possible, comme cela est illustré à la figure 1, de disposer longitudinalement l'étiquette 34 entre la tête 14A de la première clef 12A et la fourche 26A du premier tronçon d'extrémité 22A du lien 10.

Pour garantir que l'étiquette 34 reste associée à la première
15 clef 12A même après la séparation des deux clefs préalablement appariées, il est prévu des moyens qui retiennent la tête 14A de la première clef 12A et l'étiquette 34 sur le premier tronçon d'extrémité 22A.

A cet effet, le premier tronçon 22A, au voisinage de son
20 extrémité supérieure 38A par laquelle il est relié au tronçon intermédiaire 20, comporte deux barres d'arrêt 40A qui s'étendent transversalement et de manière opposée à partir du premier tronçon d'extrémité 22A, selon une orientation perpendiculaire à l'orientation rectiligne verticale de ce dernier.

Ainsi, au moins une barre d'arrêt 40A s'étend toujours
25 transversalement en regard de la face supérieure de la tête 14A de la première clef 12A et empêche que cette dernière et l'étiquette 34 ne soient séparées l'une de l'autre, ces deux éléments restant associés entre eux et disposés longitudinalement entre les barres d'arrêt 40A et
30 les brins de retenue 28A tant que le premier tronçon d'extrémité 22A n'est pas rompu ou coupé ultérieurement.

Comme on peut le voir sur la figure 1, l'extrémité libre 24B du
second tronçon d'extrémité 22B est différente de l'extrémité 24A, c'est-
à-dire qu'elle comporte une sphère ou boule 42B dont le diamètre est
35 supérieur à la plus grande dimension transversale de la partie du cordon constitutive du second tronçon d'extrémité 22B de façon à constituer des moyens d'identification du second tronçon d'extrémité 22B, destinés à traverser la tête 14B de la seconde clef 12B, et pour constituer des moyens de détrompage dont la fonction sera expliquée par la suite.

On a représenté schématiquement aux figures 3 et 4 un dispositif pour apparier des clefs grâce à l'agencement selon l'invention.

Sur ces figures, des composants identiques, similaires ou analogues à ceux décrits précédemment sont désignés par les mêmes
5 chiffres de référence.

Le dispositif 50 est pour l'essentiel constitué par deux postes adjacents 52A, 52B dont chacun comporte, en partie supérieure, un socle 54A, 54B d'orientation sensiblement horizontale.

Chaque socle 54A, 54B comporte, dans sa face supérieure
10 56A, 56B, une empreinte 58A, 58B qui correspond à la forme de la tête 14A, 14B d'une clef correspondante associée 12A, 12B de manière que la clef puisse être posée horizontalement, de haut en bas, dans l'empreinte correspondante comme cela est illustré aux figures 3 et 4.

Dans le fond de chaque empreinte 58A, 58B, il est prévu un
15 trou vertical débouchant 60A, 60B qui est positionné de manière à être aligné avec le trou correspondant 18A, 18B de la tête 14A, 14B de la clé lorsque cette dernière est dans l'empreinte.

La forme non symétrique de chacune des têtes 14A, 14B permet de la positionner dans l'empreinte associée dans un seul sens de
20 manière que le trou 18A, 18B soit toujours en regard du trou vertical 60A, 60B du socle 54A, 54B.

Il est ainsi possible d'introduire verticalement de haut en bas le tronçon d'extrémité 22A, 22B avec sa fourche 26A, 26B à travers successivement le trou 18A, 18B de la tête 14A, 14B de la clef, puis à
25 travers le trou 60A, 60B du socle 54A, 54B.

L'introduction verticale est poursuivie après le passage à travers les deux trous de manière que l'extrémité libre inférieure 24A, 24B de chaque tronçon d'extrémité 22A, 22B du lien 10 puisse être ensuite reçue dans un logement ou trou 62A, 62B formé dans la partie
30 inférieure du poste 52A, 52B, ce logement pouvant comporter des moyens de détection, par exemple un capteur (non représenté sur les figures), pour vérifier que le lien a bien été mis en place, c'est-à-dire que le tronçon d'extrémité 22A, 22B a bien été introduit à travers la tête 14A, 14B.

Pour guider l'extrémité 24A, 24B en direction du logement 62A, 62B, une rampe 64A, 64B peut être formée sur la partie inférieure du socle 52A, 52B.
35

Après mise en place du lien 10, de façon à permettre l'extraction de l'agencement regroupant les deux clefs 12A et 12B

appariées par le lien 10, ce dernier est extrait transversalement, c'est-à-dire que chaque socle 54A, 54B comporte une encoche 66A, 66B qui s'étend transversalement et qui débouche dans le trou 60A, 60B.

Afin de permettre l'association et l'appariement de l'étiquette
5 34 avec la première clef 12A, le premier socle 54A comporte une fente 70A qui s'étend horizontalement dans l'épaisseur du socle 54A et qui débouche transversalement de manière que l'étiquette 34 puisse y être mise en place transversalement et que son trou 36 puisse être positionné aligné avec les trous 18A et 60A.

10 Comme on peut le voir sur la figure 3, le trou 60A formé dans le socle 54A comporte au voisinage de son extrémité inférieure une portion rétrécie 72A dont les dimensions sont telles qu'elles permettent le passage de la fourche 26A mais qu'elles ne permettraient pas le passage de la boule ou sphère d'extrémité 42B agencée à l'extrémité
15 libre 24B du second tronçon d'extrémité 22B du lien 10.

Ainsi, il est impossible d'introduire le second tronçon 22B dans la tête 14A de la première clef 12A garantissant ainsi que c'est le premier tronçon 22A avec ses barres d'arrêt 40A qui est associé et enfilé dans la tête 14A de la première clef 12A et à travers l'étiquette
20 34.

REVENDICATIONS

1. Agencement pour l'appariement d'au moins une première (12A) et une deuxième (12B) clefs appartenant à un jeu de clefs d'un
5 véhicule automobile et dont chacune comporte une tête de clef (14A, 14B) dans laquelle est formé un trou (18A, 18B) pour le passage d'un lien (10, 22A, 22B) qui peut être rompu ou coupé pour séparer les clefs appariées (12A, 12B), caractérisé en ce que le lien est un cordon dont
10 chacun des premier et deuxième tronçons d'extrémité (12A, 12B) s'étend à travers le trou (18A, 18B) de la tête (14A, 14B) de la première clef (12A), de la deuxième clef (12B) respectivement, et en ce que les première et deuxième extrémités libres (24A, 26A, 24B, 26B) du cordon sont de dimension supérieure à celle du trou (18A, 18B) de la tête de la première clef (12A), de la seconde clef (12B) respectivement.

15 2. Agencement selon la revendication 1, caractérisé en ce que le lien (10) est réalisé dans un matériau déformable élastiquement, et en ce que chacun des premier (22A) et second (22B) tronçons d'extrémité du cordon (10) est conformé en une fourche (26A, 26B) comportant au moins un brin de retenue (28A, 28B), réalisé venu de matière avec le
20 cordon, qui s'étend transversalement par rapport à ce dernier et qui est susceptible d'être replié longitudinalement le long du cordon pour être introduit, avec le cordon, à travers le trou (18A, 18B) de la tête de la clef correspondante.

3. Agencement selon la revendication 2, caractérisé en ce que
25 le brin de retenue (28A, 28B) forme un angle aigu par rapport au cordon (22A, 22B), et en ce que son extrémité libre (30A, 30B) est située en arrière par rapport à l'extrémité libre (24A, 24B) du cordon.

4. Agencement selon l'une des revendications 2 ou 3, caractérisé en ce que chaque fourche (26A, 26B) comporte deux brins
30 de retenue (28A, 28B) symétriques et transversalement opposés par rapport au cordon.

5. Agencement selon l'une quelconque des revendications précédentes, caractérisé en ce que le premier tronçon d'extrémité (22A) du cordon est délimité par au moins une barre d'arrêt (40A), réalisée
35 venue de matière avec le cordon, qui s'étend transversalement par rapport au cordon, et en ce qu'une étiquette (34) d'identification de clef (12A), comportant un trou (36) traversé par le cordon, et la tête (14A) de la première clef (12A), sont disposées longitudinalement entre la première extrémité libre (24A) du cordon et la barre d'arrêt (40A).

6. Agencement selon la revendication 5, caractérisé en ce que l'étiquette (34) est disposée entre la première extrémité libre (24A) du cordon et la tête (14A) de la première clef (12A).

5 7. Agencement selon l'une quelconque des revendications 5 ou 6, caractérisé en ce que le premier tronçon d'extrémité (22A) du cordon est délimité par deux barres d'arrêt (40A) symétriques et opposées qui s'étendent perpendiculairement par rapport au cordon.

10 8. Agencement selon l'une quelconque des revendications 5 à 7, caractérisé en ce que l'une (24B) des deux extrémités libres du cordon comporte des moyens (42B) de détrompage pour son identification par rapport à l'autre extrémité libre (24A) et son appariement avec l'une des deux clefs (12A, 12B).

15 9. Agencement selon l'une quelconque des revendications précédentes, caractérisé en ce que le lien (10) est réalisé en matière plastique moulée, et en ce que la section des deux tronçons d'extrémité (22A, 22B) du cordon est supérieure à la section du tronçon intermédiaire (20) qui les relie entre eux.

20 10. Agencement selon l'une quelconque des revendications précédentes, caractérisé en ce que le tronçon intermédiaire (20) du cordon, qui relie entre eux les deux tronçons d'extrémité, comporte une amorce (32) de rupture du cordon.

25 11. Dispositif pour l'appariement d'au moins deux clefs à l'aide d'un agencement selon l'une quelconque des revendications précédentes, caractérisé en ce qu'il comporte un premier et un deuxième socle (54A, 54B) horizontal comportant chacun une empreinte (58A, 58B) complémentaire de la tête (14A) de la première clef (12A), de la seconde clef (12B) respectivement, un trou (60A, 60B) débouchant verticalement formé dans le fond de l'empreinte et agencé en regard du trou (18A, 18B) de la tête de la clef posée dans l'empreinte, et une
30 encoche transversale (60A, 60B) débouchante dans le trou vertical (60A, 60B) pour l'extraction du lien après l'appariement des deux clefs (12A, 12B).

35 12. Dispositif selon la revendication précédente prise en combinaison avec la revendication 6, caractérisé en ce que le premier socle (54A) comporte une fente horizontale (70A) formée dans son épaisseur et qui débouche transversalement pour recevoir une étiquette (34) dont le trou (36) est aligné avec le trou vertical (60A) du socle (54A).

13. Dispositif selon l'une quelconque des revendications 11 ou 12, caractérisé en ce que chaque tronçon d'extrémité (22A, 22B) du cordon est introduit verticalement de haut en bas dans le trou (68A, 68B) de la tête de clef correspondante, et en ce que le dispositif
5 comporte, au droit de chaque socle, un capteur pour détecter la présence de l'extrémité libre correspondante (24A, 24B) du cordon après appariement des clefs.

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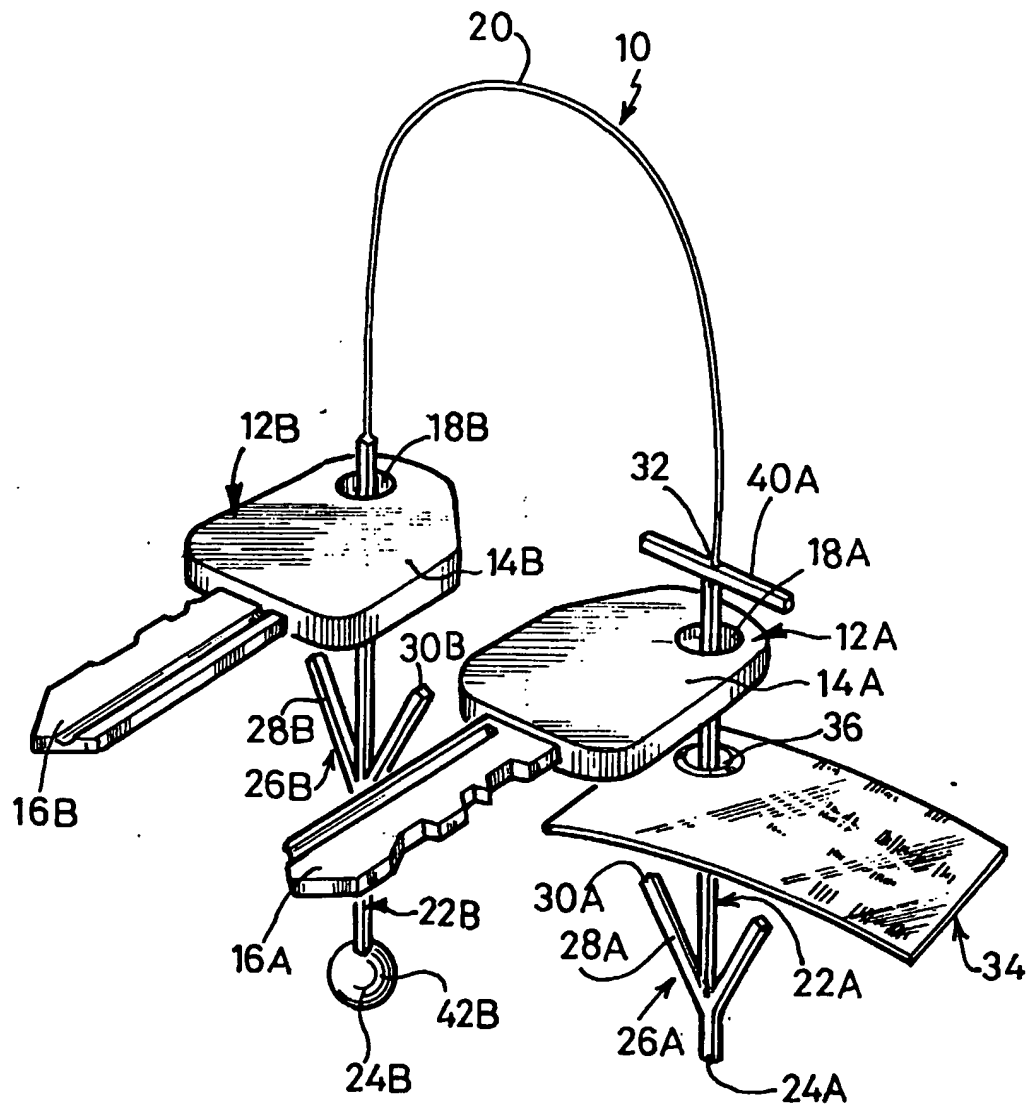
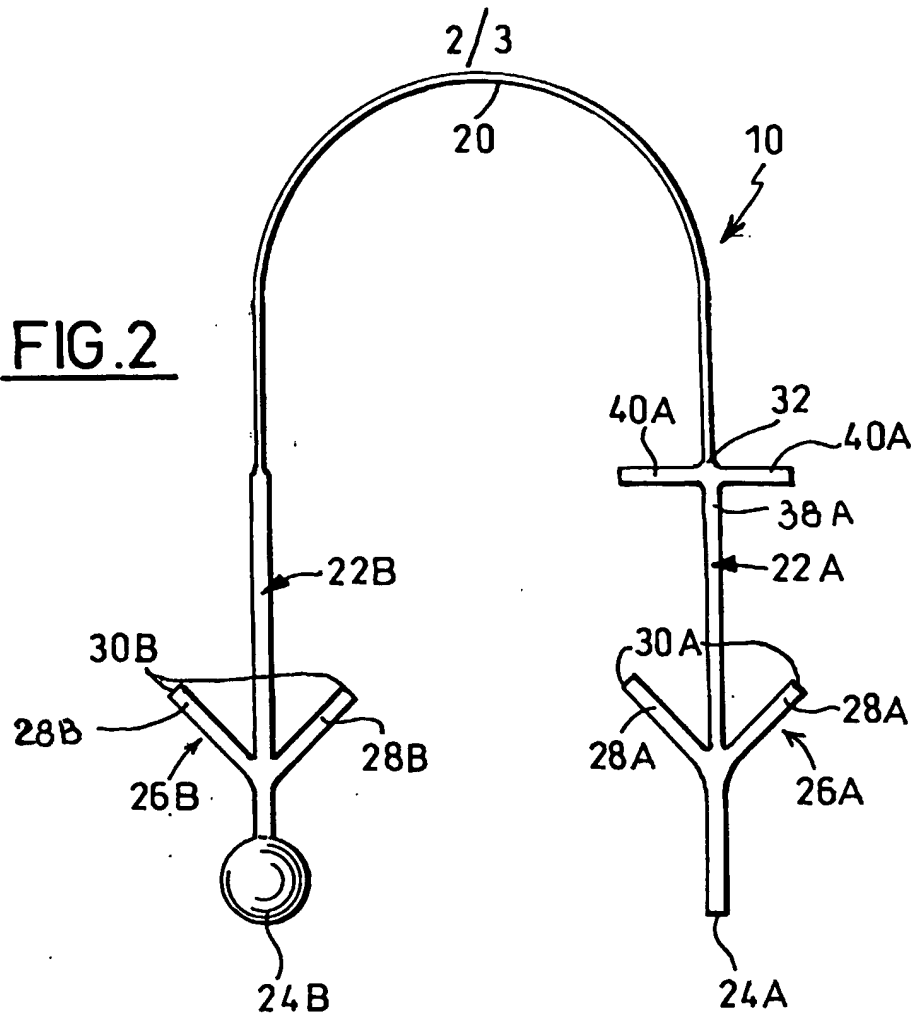
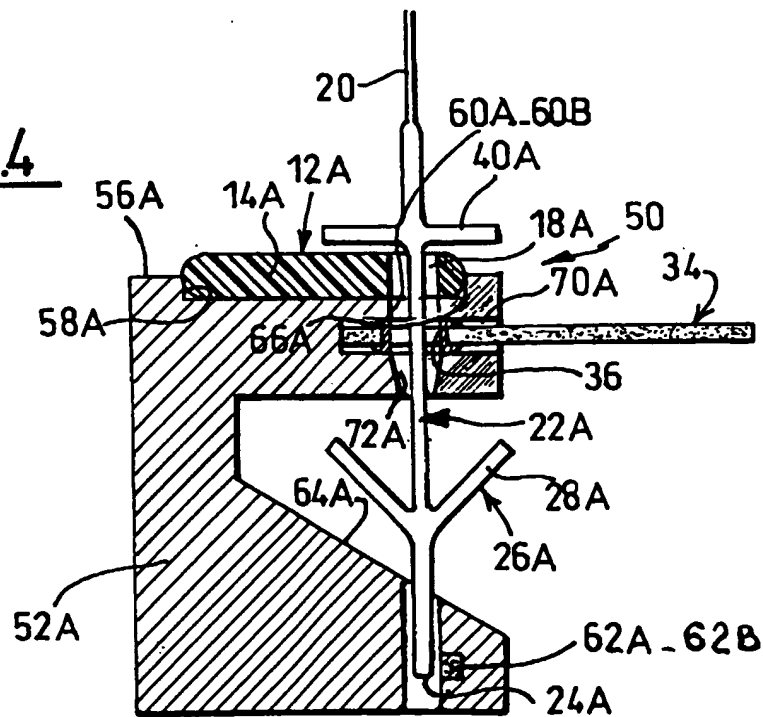
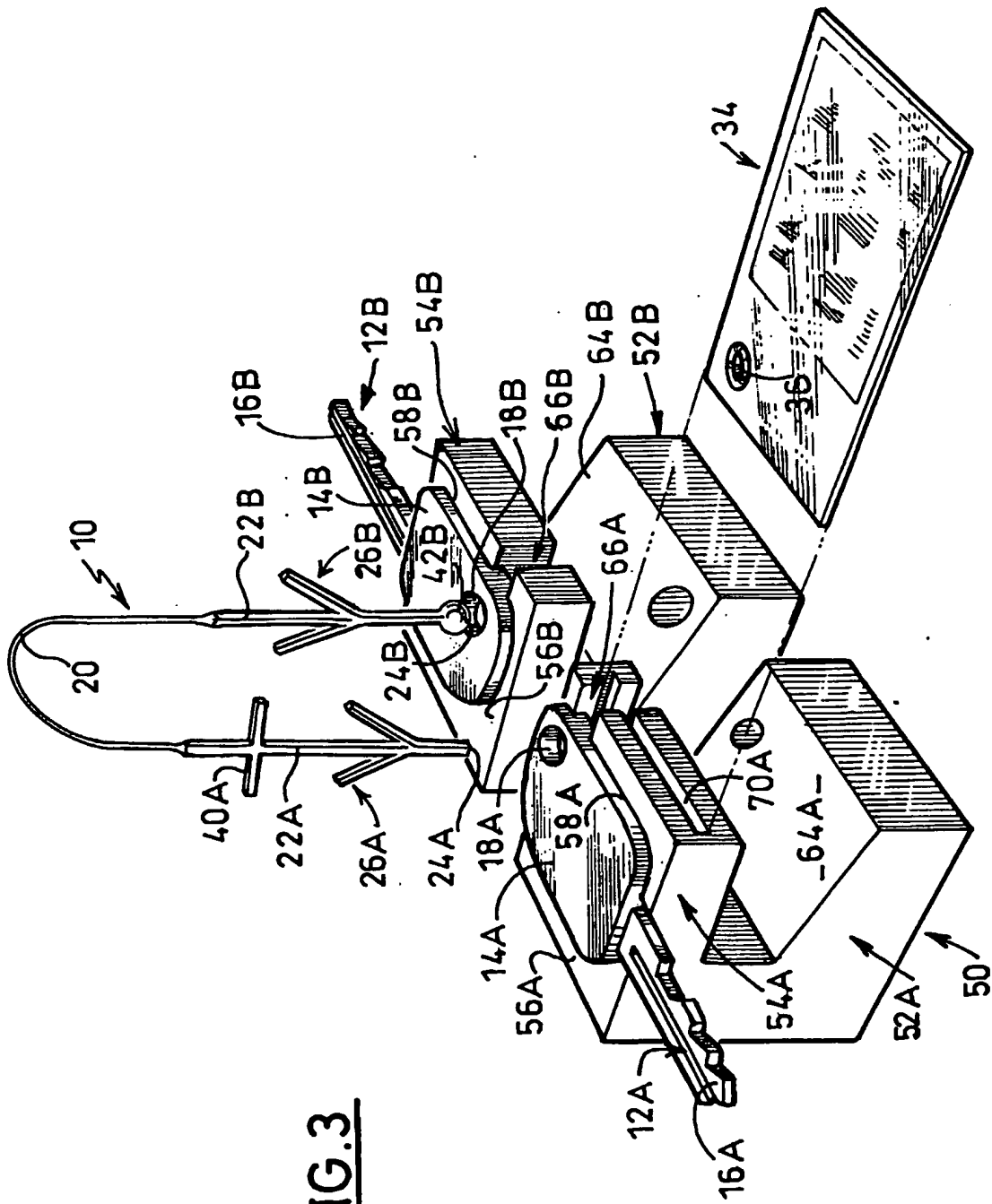
FIG.1

FIG. 2FIG. 4



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